

Date 6/24/06

Time on Station: 00:12 UTC

Location: 9.9924N, -104.2403W

Site No. 206

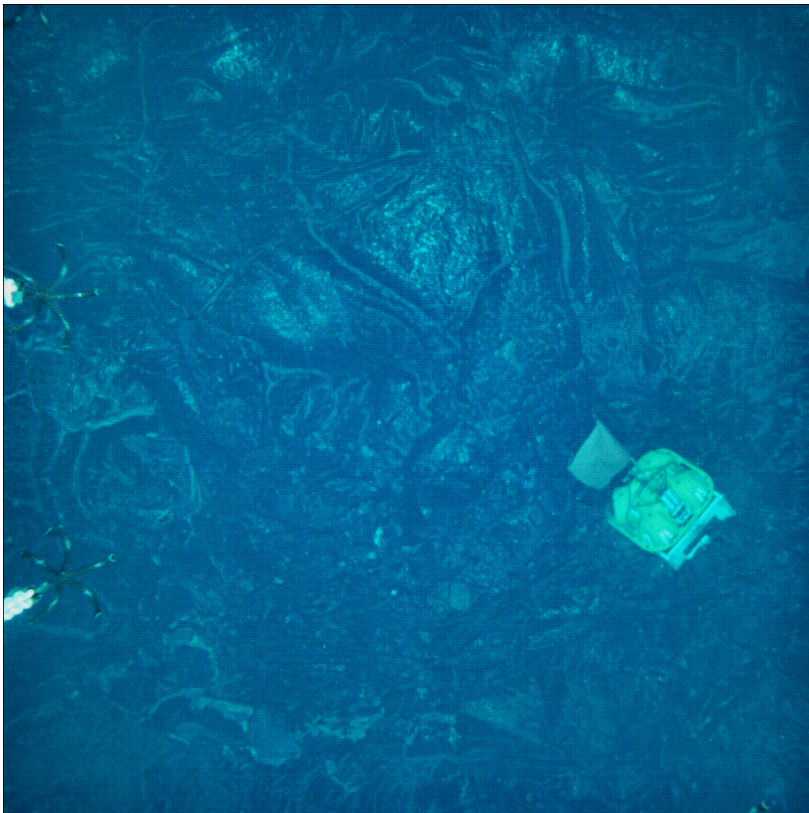
Instrument No. 31

#### Discussion:

The tow cam was deployed and once it reached bottom we began a search pattern by incrementally bumping the ship 10-20 m in each compass direction around the surveyed instrument location. The instrument was found two hours into the search. Several clear frames were shot and the burial of the instrument was unmistakable. The rescue / grappling attempts proved very challenging since the camera has no way to send heading topside... so dead reckoning was as good as it got. All that set aside, the ability to hover within 10m of the instrument was very impressive. On at least occasion it was believed that the camera had contacted the instrument, however, the instrument did not release.... Several frames show the instrument twisted on the anchor. It is unclear whether the cause is initial instrument touchdown or lava flow.

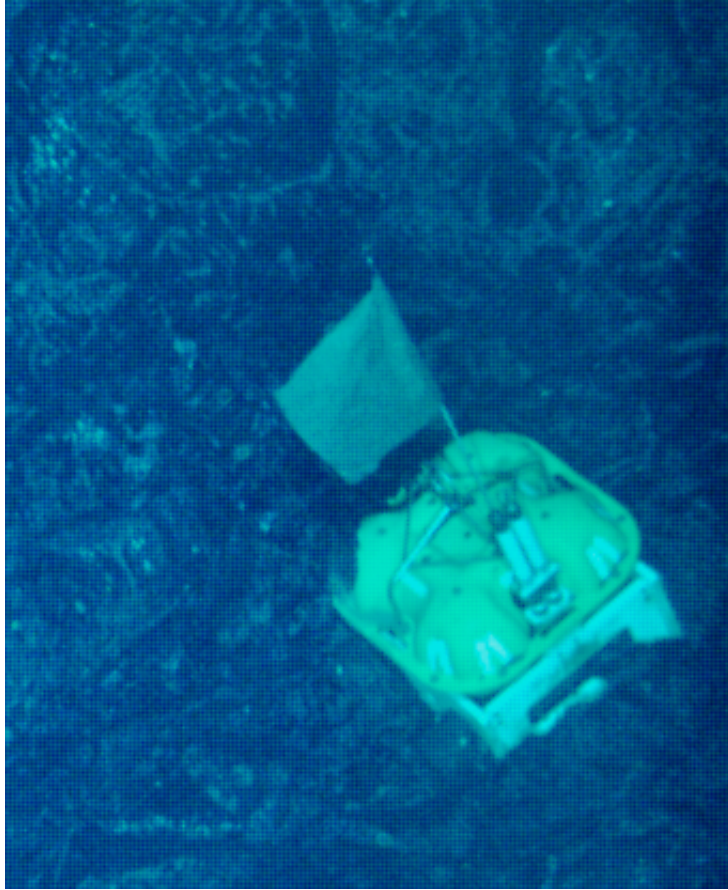
#### Photo Discussion:

The photos included are only the first pass of processing of the raw images. Quality should improve on subsequent passes.



This image shows fresh, billowy basalt with OBS unit 31 (site 206) caught at the bottom of the run in a rubble section.

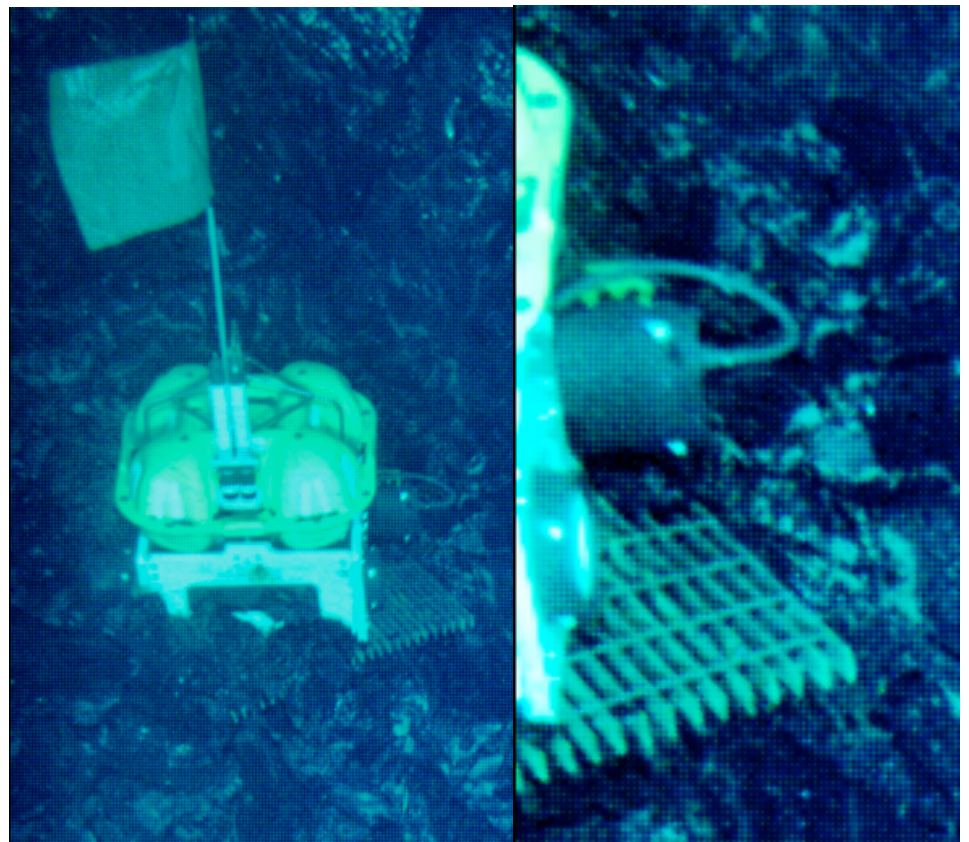
The treble hooks and chains mounted on the tow cam can be seen on the left edge of the frame.



This image shows OBS unit 31 partially buried in the lava flow. The left hand corner of the frame is completely buried up to and over the float hard hat. The digital end of the logger hard hat is also completely buried.

The acoustic hard hat is not encased, explaining why the unit is talking but unable to release.

This image shows another angle of OBS 31 buried in a lava flow. The UHMW frame has fresh volcanic glass caught inside against the acoustic hard hat. The anchor is twisted around the frame. There is fresh volcanic glass inside the frame against the acoustic hard hat. Note the possible cable damage visible in the right hand frame.



## OPERATIONS LOG:

### 00:26 UTC

- Tow cam on bottom

### 1:00 UTC

- Large areas of very smooth, high velocity sheet flows observed near the surveyed instrument location (within 40m).

### 2:12 UTC

- OBS visual within a billowy lava field, but the momentum of the cam carried it away past the instrument location.
  - There were several frames shot of instrument no. 31. There is no doubt that the instrument was either hit and partially buried with rubble or a flow inflated beneath it, then collapsed, shattering basalt around it. The burial extent covers approximately 45% of the UHMW frame and a portion of the floatation hard hat.
- The instrument is sighted several times after this with serious attempts to drop the camera within range to knock it loose. Dan Fornari took risks well above and beyond the call of duty. He actually hit the seafloor several times, shattering basalt.

### 4:05 UTC

- The AC box was connected to a dunk transducer and a 20 second ranging interval set up in case the instrument is knocked loose.
- Burn II command sent.

### 4:20 UTC

- Burn II complete.
- Ranging: 2518 consistent.... Not coming up.
- Lost 1 grapple hook off the cam

### 4:28 UTC

- Burn I sent.

### 4:43 UTC

- Burn II complete
- Ranging: 2518m consistent... not coming up.

### 5:31 UTC

- Disable unit 31 sent
- 7/7 ping confirmation
- Moving on to do seafloor mapping.